



January 14, 2009

Mr. Brian Hancock
U.S. Election Assistance Commission
Voting System Testing and Certification Program
1225 New York Avenue, NW, Suite 110
Washington, DC 20005

Sent via E-mail

Dear Mr. Hancock,

The purpose of this letter is to document the audit of the ES&S Unity v.3.2.0.0 Technical Data Package (TDP) in accordance with your November 21, 2008 email to Steve Pearson of ES&S providing instructions on the reuse of SysTest Labs' Unity v.4.0.0.0 testing for the ES&S Unity v.3.2.0.0 . EAC Certification test effort. iBeta has completed the audit of the Unity v.3.2.0.0 TDP. This letter provides iBeta's findings and opinion to the EAC regarding the reuse of the PCA Document Review conducted by SysTest Labs from the Unity v.4.0.0.0 test effort.

Scope of the Unity v.3.2.0.0 EAC Certification Test Effort

The scope of Unity v.3.2.0.0 is a subset of Unity v.4.0.0.0 . It is restricted to the applications of the ES&S election management system, the DS200 and M650 optical scanners and the AutoMARK Voter Assistant Terminals (VAT) A100 and A200 ballot markers. It is our understanding that over the course of the Unity v.4.0.0.0 test effort ES&S made changes to the scope of Unity v.4.0.0.0 . These scope changes included the incorporation of the VAT ballot markers and the AIMS application. These had previously been in the Unity 3.0.1.0-3.0.1.1 EAC Certification test effort. Results of the PCA Document Review performed by SysTest Labs, including open discrepancies were delivered in:

- Unity v.4.0.0.0 PCA Document Review results for the ES&S election management system applications, the DS200 and M650; and
- Unity 3.0.1.0-3.0.1.1 PCA Document Review results for the VATs and AIMS.

ES&S delivered Unity v.3.2.0.0 TDP which consisted of:

- The rebranded Unity v.4.0.0.0 TDP incorporating the "*NOTICE OF UNCERTIFIED FUNCTIONALITY*" disclaimer; and
- The AutoMARK VAT and AIMS TDP.

iBeta sampled the ES&S Unity v.3.2.0.0 documents. The sample selection included the documents identified in the SysTest Labs issued discrepancies and documents needed to complete the Unity v.3.2.0.0 trusted builds, a sample 3% source code review, test planning and test execution. Criteria for the review were to confirm that the Unity v.3.2.0.0 documents addressed any document discrepancies within the scope of the Unity v.3.2.0.0 test effort and the content provided sufficient information in order to complete the test tasks list above.

Documentation of the Audit of the TDP

Due to the change of scope many discrepancies issued by SysTest Labs were outside the scope of Unity v.3.2.0.0 . iBeta reviewed every open discrepancy. Issues which were identified as all or partially relevant to the Unity v.3.2.0.0 scope were transferred to iBeta's *Unity v.3.2.0.0 Discrepancy Report*. Issues or parts of issues, outside this scope were excluded. Scope assessment was recorded in a review disposition document. The transferred discrepancies identified location of the issue, SysTest Labs discrepancy number, and detail of the initial description from the SysTest Labs discrepancy report. iBeta confirmed the issues were valid and traced to an appropriate 2002 VSS requirement. iBeta reviewed the SysTest Labs description history from the original SysTest Labs discrepancy report and the Unity v.3.2.0.0 documents submitted by ES&S to validate

resolution of the issue. In some instances discrepancies are being incorporated into Unity v.3.2.0.0 Functional Configuration Audit (FCA).

The review of documents necessary to complete Unity v.3.2.0.0 trusted builds, sample code review, test planning and test execution was incorporated into these tasks and recorded in the daily status. Missing content or discrepancies were reported in the *Unity v.3.2.0.0 Discrepancy Report*.

Review Results

The Unity v.3.2.0.0 TDP submitted by ES&S was sufficient to close the majority of the document discrepancies deemed inside the scope of Unity v.3.2.0.0.

- One document issue remains open for additional clarification of the ES&S response;
- One document issue remains open for incorporation into the iBeta Security Review; and
- Four issues did not have a response from ES&S. As these were the last items on the list it is possible that they had not been submitted to ES&S by SysTest Labs.

Review of documents necessary to perform Unity v.3.2.0.0 trusted builds, sample 3% code review and test planning has generally found them to contain the information needed to perform these task. Four issues were noted in the review.

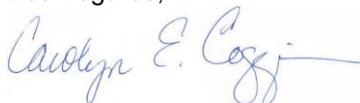
- Document discrepancy #10 identified a gap in the Win650 build procedure;
- Document discrepancy #50 identified the System Overview and System Limitations do not reflect the language scope of Unity v.3.2.0.0;
- Document discrepancy #52 identified System Overview contained a typo with an incorrect hardware version for the DS200; and
- Document discrepancy #53 identified the absence of the VATs and AIMS from the System Limitations.

The attached Tables 1 and 2 provide the results and disposition of all SysTest Labs Unity v.4.0.0.0 issued discrepancies. Note: Functional discrepancies which remain open for validation in the FCA are also listed in Table 1.

Recommendation on Reuse of the SysTest Labs PCA Document Review

Based upon the audit and review documented herein iBeta deems that the results of the SysTest PCA Document Review are adequate for reuse in the Unity v.3.2.0.0 Certification test effort. Use of the TDP in development of the Volume, Stress, Error Recovery and Security testing shall incorporate additional review. Any documentation issues encountered shall be reported in the Unity v.3.2.0.0 discrepancy report. We do not recommend a more comprehensive review of the TDP.

Best regards,



Carolyn Coggins
QA Director - Voting

Attachments: Table 1 & 2

Table 1 Unity v.3.2.0.0 Applicable Discrepancies

SysTest#	DS200	M650	VAT	EMS	Other Doc	iBeta#	Disposition	Part Excluded fm Unity v.3.2.0.0	Out of Scope Disposition
6	X	X				12	Closed	M100	Not reviewed, remains open in Unity v.4.0.0.0
23					X	13	Closed	ABCR, Test Plan	Not reviewed, remains open in Unity v.4.0.0.0
24					X	14	Closed	ABCR, Test Plan	Not reviewed, remains open in Unity v.4.0.0.0
26		X		X		15	Closed	M100, IVIM, IVO, ABCR	Not reviewed, remains open in Unity v.4.0.0.0
27	X	X		X		16	Closed	IVIM, DAM, IVO, M100	Not reviewed, remains open in Unity v.4.0.0.0
43					X	17	Closed	ABCR	Not reviewed, remains open in Unity v.4.0.0.0
284				X	X	18	Closed	PEB Reader/ Writer, DAM, IVIM	Not reviewed, remains open in Unity v.4.0.0.0
297				X		19	Closed		
317					X	20	Closed		
318				X	X	21	Closed	IVIM, M100	Not reviewed, remains open in Unity v.4.0.0.0
339					X	22	Closed		
348		X		X		23	Closed	ABCR, IVIM, DAM, M100	Not reviewed, remains open in Unity v.4.0.0.0
355					X	24	Closed	ABCR , Voyager hand scanner, 4.0 Test Plan	Not reviewed, remains open in Unity v.4.0.0.0
359					X	25	Closed	ABCR , Voyager hand scanner, Test Plan	Not reviewed, remains open in Unity v.4.0.0.0
361					X	26	Closed	Test Plan	Not reviewed, remains open in Unity v.4.0.0.0
372	X	X		X		27	Closed	M100	Not reviewed, remains open in Unity v.4.0.0.0
411		X				28	Open, FCA		
429				X		30	Open		
435					X	31	Open, FCA		
453	X					32	Open, FCA		
454	X					33	Open, FCA		
473				X		34	Closed		
475				X		35	Open, FCA		
479					X	36	Closed		
480					X	37	Closed		
492				X		38	Closed		
493					X	39	Closed		
495				X		40	Closed		
496		X				41	Closed		
497					X	42	Closed		

SysTest#	DS200	M650	VAT	EMS	Other Doc	iBeta#	Disposition	Part Excluded fm Unity v.3.2.0.0	Out of Scope Disposition
549					X	43	Closed		
550					X	44	Closed		
553				X		45	Open		
554				X		46	Open		
555				X		47	Open		
556				X		48	Open		
557				X		49	Closed		

Table 2 Out of Scope & Non Issues

SysTest #	Finding	Disposition
190, 191, 196, 198, 235, 238, 245, 369, 382, 388, 390, 401, 428, 434, 437, 441, 442, 445, 446, 450, 451, 452, 458, 461, 463, 464, 466, 467, 468, 469, 474, 478, 483, 485, 486, 487, 488, 490, 491, 494, 498, 503, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 545, 547, 548, 551, 552	<p>The following are excluded from Unity v.3.2.0.0 :</p> <p>System Hardware Automated Bar Code Reader iVotronic DRE Precinct Tabulator Model 100 Precinct Ballot Counter Voyager Hand Scanner (COTS)</p> <p>System Software Unity Data Acquisition Manager Unity iVotronic Ballot Image Manager</p> <p>Uncertified System Features Network Data Transmission Including remote transmission of vote data and/or consolidated results data</p>	Not reviewed, remains open in Unity v.4.0.0.0
459, 510, 538	<p>Closed or Informational Issues Comments in the report identified these issues as closed or informational typographic errors</p>	Not reviewed, non- significant issue
499, 500, 501, 502, 504, 505, 506, 507, 508, 509, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 539, 540, 541, 542, 543, 544, 546	<p>Issues Written Against System Change Notes Changes occurring during the Unity v.4.0.0.0 testing were reported in the System Change Notes. The role of the VSTL in the FCA process is to determine if the changes were tested appropriately and determine how they should be incorporated into functional testing. These discrepancies identify test or other documentation as lacking. The VSS instructs the VSTL to test if testing is inadequate. In iBeta's opinion, as written, these are not documentation discrepancies, but findings applicable to the FCA.</p>	As these are findings for functional test scope they remain open in Unity v.4.0.0.0 ; iBeta shall examine the change notes as part of the FCA Document Review for relevance to the Unity v.3.2.0.0 test scope